

GRANT & HACKH'S CHEMICAL DICTIONARY

[American, International, European and British Usage]

*Containing the Words Generally Used in Chemistry,
and Many of the Terms Used in the Related
Sciences of Physics, Medicine, Engineering,
Biology, Pharmacy, Astrophysics,
Agriculture, Mineralogy, etc.*

Based on Recent Scientific Literature

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Completely Revised and Edited by

ROGER GRANT

M.A., D. de l'U., Ph.D., C. Chem., M.R.S.C. Consultant

CLAIRE GRANT

M.B., B.S., M.R.C.P.E., Medical Practitioner

Dr. Hellmuth A. Deckers
European Patent Attorney
Bahnhofstraße 26 A
D-55218 Ingelheim am Rhein
Tel. +49 - 6132 - 8996-0
Fax +49 - 6132 - 8996-20

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carbon atom: primary a., $R\cdot CH_2OH$; secondary a., R_2CHOH ; tertiary a., R_3COH ; (2) the number of OH groups; as,

	Prefix		Suffix
$R(OH)_1$	mono-	hydroxy	ol
$R(OH)_2$	di-		diol
$R(OH)_3$	tri-		triol
$R(OH)_4$	tetra-		tetrol
$R(OH)_5$	penta-		pentol
$R(OH)_n$	poly-		

See *aromatic alcohols*, *phenols*, and *alcohol acids*. **aldehyde** ~

Compounds containing the $-CHO$ and $-OH$ groups.

aromatic ~ Cyclic compounds containing the $-OH$ group

in a side chain; cf. *phenols*. **primary** ~ Compounds

containing the group $-CH_2OH$. **secondary** ~ Compounds

containing the $=CHOH$ group. **tertiary** ~ Compounds

containing the $=COH$ group.

a., of crystallization The a. contained in a crystalline salt in

a molecule; e.g., $KOH \cdot 2C_2H_5O$.

alcoholysis The cleavage of a C-C bond by the addition of

an alcohol: $R \cdot CH_2 \cdot R' + R''OH \rightarrow R''OCH_2R + R'H$. Cf.

hydrolysis.

Alcoholmeter See *breath alcohol*.

alcohol. Trade name for a surfactant of the

dioctylsulfosuccinate type.

alcohol. A sol in alcohol.

aluminum A corrosion-resistant alloy: Cu 88-90, Al 7.5, Fe

28.35, Ni 1%.

alicyclic. An aliphatic-cyclic radical; a saturated

aromatic radical.

Aldactone Trademark for spironolactone.

aldol A carbohydrate containing the aldehyde

($=CHO$), alcohol ($-OH$), and carbonyl ($=CO$) radicals.

aldehydium Thallium.

aldehyde Aldehyde oxidase*, which forms acids from

aldehydes.

aldehyde (1) Acetaldehyde*. (2) See *aldehydes*. **acetic** ~

Acetaldehyde*. **anisic** ~ Anisaldehyde*. **cinnamic** ~

Cinnamaldehyde*. **cuminic** ~ Cumin a. **heptylic** ~

Heptanal*. **met** ~ See *metalddehyde*. **nonanthic** ~

Heptanal*. **par** ~ See *paraaldehyde*. **propionic** ~

Propionaldehyde*. **pyromucic** ~ Furaldehyde*. **salicylic**

~ Salicylaldehyde.

a. ammonia (1) A compound formed by the combination of

an a. and ammonia. Crystalline, decomp. on warming with

dilute acid; used for the purification of aldehydes. (2)

$MeCH(OH)NH_2 = 61.1$. Colorless crystals, m. 97, soluble in

water. **a. condensation** See *aldol condensation*. **a. group**

The $-CHO$ radical, in which the H is not replaceable by a

positive radical, but can be replaced by negative atoms or

groups. Cf. *aldehydes*. **a. ketone** $R \cdot CO \cdot R \cdot CHO$.

Ketoaldehyde. **a. oxidase*** See *aldehyde*.

aldehyde Acetylene*.

aldehydes* Organic compounds containing the $-CHO$

radical, oxidized to acids and reduced to alcohols. A. are

indicated by the prefix *oxo** (for O of CO) or *formyl** (for

CHO), or by the suffix *-al**, *-dial**, *-trial**, *-carbalddehyde**, etc.

di ~ Compounds containing 2 a. groups. **olefin** ~

Compounds containing a double bond and the a. group.

paraffin ~ Compounds containing the a. group attached to a

saturated aliphatic chain. **thio** ~ Compounds containing the

$-CHS$ group.

-aldehydic Suffix indicating that one COOH group in a

dicarboxylic acid, with a trivial name, has been changed into a

CHO group; as malonaldehydic acid, $OHC \cdot CH_2 \cdot COOH$. **a.**

hydrogen The H atom of the aldehyde group; not readily

replaced by metals.

aldehydine $C_5H_3NMeEt = 121.2$. 2-Ethyl-5-methylpyridine.

Colorless liquid, $d_{20} 0.9918$, b. 173, insoluble in water.

aldicarb* See *insecticides*, Table 45.

aldime $R \cdot CH(NH)$. An acid imine.

aldobionic acids Oxidized trisaccharides; as, gluco- β -

glucuronic acid, from the hydrolysis of flaxseed mucilage.

aldohexose* A hexose containing the aldehyde group; e.g.,

glucose. Cf. *ketohexose*.

aldoketenes See *ketenes*.

aldol $Me \cdot CHOH \cdot CH_2 \cdot CHO = 88.1$. (1) β -Hydroxybutyric

aldehyde, 3-hydroxybutanal*. A condensation product of

acetaldehyde. Colorless liquid, d. 1.109, soluble in hot water.

Its solution leaves a polymer, paralol, on evaporation. Cf.

paraaldehyde, *metalddehyde*. (2) One of a class of condensation

products formed from an aldehyde. **a. condensation** The

polymerization of an aldehyde in presence of dilute acid or

alkali, e.g., aldol formation. The aldol polymer is stabler than

the meta and para polymers. Three types: (1) true aldol

condensation: $R_2CO + H \cdot CH_2COR \rightarrow R_2C(OH) \cdot CH_2 \cdot COR$

$\rightarrow R_2C:CH \cdot COR$. (2) Cannizzaro reaction: $2R \cdot CHO \rightarrow R \cdot$

$COOH + R \cdot CH_2OH$. (3) Claisen condensation: $2R \cdot COOR' \rightarrow$

$RC(OH):CHCOOR' + R'OH$.

aldolase* See *enzymes*, Table 30.

aldonic acids Acids produced by gentle oxidation of the

corresponding aldose; as, gluconic acid from glucose.

aldopentose* A pentose containing the aldehyde group; as,

arabinose.

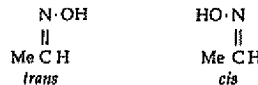
aldose* A carbohydrate containing the aldehyde group. Cf.

ketose, *sugar*.

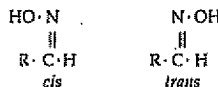
aldoxime $C_2H_5ON = 59.1$. Acetaldoxime. Colorless liquid,

b. 115, soluble in water; used in organic synthesis. Isomeric

forms:



aldoximes* Organic compounds containing the $-C(H):NOH$ group. Stereoisomers:



Form C-, N- and O-substituted compounds.

aldrey A noncorroding aluminum alloy, used for

transmission lines: Mg 0.4, Si 0.6, Fe 0.3%.

aldria* See *insecticide*, Table 45 on p. 305.

alembic (1) Ancient name for a retort. (2) Figuratively,

anything that purifies.

aletris False unicorn, starwort, blazing star, colic root, star

grass, bitter grass, devil's bit. The dried rhizomes of *Aletris*

farinosa (Haemodoraceae) of the United States.

Aleurites (1) The Chinese wood or tung oil plant. (2) A genus

of trees (Euphorbiaceae) of the warmer zones of Asia which

yield oil; as, *A. cordata*, tung oil.

aleuritic acid $C_{16}H_{32}O_5 = 304.4$, 9,10,16-

Trihydroxypalmitic acid, m. 102, from the shellac of *Aleurites*

montana.

aleurometer A cylinder for testing the baking capacity of

flour from the expansion of its gluten.

aleuronate A vegetable protein food. A tasteless, yellow

powder. **a. powder** Baked flour mixed with cooked starch

for injection into the pleural cavity of animals (rabbits) to

stimulate the production of leucocytes. Cf. *leucocyte*.

aleurone Protein grains in the endosperm of ripe seeds.

and amino group, formed by the action of ammonia on ketones. Cf. *polypeptide*.
ketocoumaran Oxodihydrobenzofuran*.
ketodestrin Estrone.
*ketoheptose** A monosaccharide of 6 C atoms, with a ketone group rather than an aldehyde group; e.g., fructose. Cf. *aldohexose*.
ketohydroxyestrin $C_{18}H_{22}O_2 = 270.4$. A hormone from the urine of pregnant women and mares; an anhydride of estriol. Cf. *sterols*.
ketoimine A compound containing an imino and carbonyl group.
ketoindole Oxindole.
ketoketenes See *ketenes*.
ketol Ketone alcohols. A compound containing a carbonyl and hydroxy group. *alpha*-~ A compound containing the $R-CO-CH_2OH$ group. *beta*-~ A compound containing the $R-CO-CH_2-CH_2OH$ group. *saturated* ~ An α - or β -ketone alcohol. *unsaturated* ~ Activinyl alcohols. A compound containing the unsaturated $R-CO-CH:CHOH$ group.
ketole Indole*.
*ketone** $R-CO-R$. An organic compound containing the carbonyl group, $=C=O$, joined to 2 C atoms. Nomenclature: naming the 2 radicals before the term *ketone* or attaching the suffix *-one* to the hydrocarbon; $CH_3-CO-CH_3$ is dimethyl ketone or propanone (acetone); or attaching the prefix *oxo-*, or the suffix *-quinone*. Classification: (1) Aliphatic, saturated: acetone*, propanone*, $Me-CO-Me$. (2) Aliphatic, unsaturated: 3-buten-2-one*, $MeCOCH:CH_2$. (3) Aliphatic, diketones*: biacetyl*, 2,3-butanedione*, $MeCOCOMe$. (4) Cyclic: cyclobutanone*, $CO-CH_2-CH_2-CH_2$. (5) Quinones:

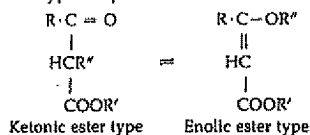
benzoquinone*, $CO-CH:CH-CO-CH:CH$. (6) Aromatic:

acetophenone, $Ph-COMe$. acid ~ Ketone acid*. aldehyde ~ A compound containing the $=CO$ and $-CHO$ groups. amine ~ Ketoamine. benzyl phenethyl ~ $PhCH_2-CH_2-CO-CH_2-Ph = 224.3$ Colorless liquid, m. 324, soluble in alcohol. butyl methyl ~* 2-Hexanone*. di ~* See *diketone*. dibutyl ~* 5-Nonanone*. diethyl ~* 3-Pentanone*. diheptyl ~* 8-Pentadecanone*. dimethyl ~* Acetone*. dipropyl ~* 4-Heptanone*. ethyl methyl ~* 2-Butanone*. ethyl pentyl ~* 3-Octanone*. ethyl propyl ~* 3-Hexanone*. heptyl methyl ~* 2-Nonanone*. methyl naphthyl ~* $C_{10}H_7-CO-Me = 170.2$. 1-~ Acetonaphthone. Colorless crystals, m. 34, soluble in alcohol. methyl pentyl ~* 2-Heptanone*. methyl propyl ~* 2-Pentanone*. methyl thienyl ~* $(C_4H_5S)COMe = 126.2$. Colorless liquid, b. 213. mixed ~ A k. with 2 different radicals attached to the carbonyl group; as, $Me-CO-Et$, ethyl methyl k. nitroso ~ A compound containing the $=CO$ and nitroso groups. olefin ~ A k. of the alkene series. paraffin ~ A k. of the alkane series. phenyl thienyl ~* $(C_4H_5S)COPh = 188.2$. Colorless crystals, m. 55, soluble in alcohol. simple ~ A k. with the same 2 radicals attached to the carbonyl group. tri ~ A compound containing 3 carbonyl groups.

k. acid* Oxo acid. A compound containing the radicals $=CO$ and $-COOH$. *alpha*-~ A compound containing the radical $-CO-COOH$, e.g., pyruvic acid or 2-oxopropanoic acid. *beta*-~ A compound containing the radical $-COCH_2-COOH$, e.g., acetoacetic acid. *gamma*-~ A compound containing the radical $-CO-CH_2-CH_2-COOH$, e.g., levulinic acid. *delta*-~ A compound containing the radical $-CO-CH_2-CH_2-CH_2-COOH$, e.g., acetylbutanoic

acid. k. alcohol See *ketol*. k. base Michler's k. k. bodies Acetone bodies. Collective term for acetone, acetoacetic acid, and 3-hydroxybutanoic acid, which accumulate in the blood in diabetes, starvation, and vomiting. See *ketosis*. k. color An artificial color containing the carbonyl group, e.g., alizarin. k. form See *ketonic ester type*. k. group The carbonyl, $=C=O$, group attached to 2 C atoms; it usually confers reducing powers.

ketonic Pertaining to a ketone. k. ester type An isomer of an enolic ester-type compound:



Cf. *desmotropism*.

ketonuria Acetonuria. The excretion of acetone in urine, as occurs in ketosis.

ketose* A sugar containing a ketone group. Cf. *aldose*.

ketoside A glucoside which yields a ketose on hydrolysis.

ketosis The presence of ketone bodies in the blood.

ketotriazole Triazolone.

ketoimine (1)* Acetoxime. A compound containing the $=C:NOH$ group, e.g. $Me_2C:N-OH$, acetoxime. (2) A compound containing the $-HC:NO-$ group. Cf. *Beckmann rearrangement*. tetra ~ See *diphenyltetraacetoxime*.

Kevadon Trademark for thalidomide.

Kevlar Trademark for a high-strength aramid.

key atom (1) An atom in a chain whose change in electronic structure induces corresponding changes in the other atoms of the chain. (2) An atom in a ring whose oscillations cause a shift of bonds. Cf. *porphyrin ring*.

kg Abbreviation for kilogram.

kgf Abbreviation for kilogram force.

khat Catta, Arabian tea. The dried leaves of *Catha edulis*; a tea.

khelin Khellin. A synthetic dimethoxymethylfurano-chromone derivative, used for its specific coronary vasodilatory activity. Also obtained from the seeds of the wild Mediterranean plant *Anni visnaga*, Lam.

Khotinsky, Achilles de (1850-1933) Russian-born American instrument designer. de K. cement A cement for glass and porcelain; insulating, covering, and connecting electric wires, glass, rubber, wood, etc.; resistant to ordinary solvents.

kibbled Broken up into small lumps of about 1 cm diameter.

kidney A paired mammalian organ that eliminates nitrogenous waste from the bloodstream; also controls the water concentration and electrolyte content, and, in part, the acid-base equilibrium. Much of the filtrate is reabsorbed, together with useful substances, as, amino acids, glucose, salt, proteins. See *glomeruli*.

kidney ore Red hematite.

kies General term for sulfide ores.

kieselguhr Diatomite. Tripoli powder. Guhr. A diatomaceous or infusorial earth. Used as an absorbent for nitroglycerin (dynamite), in chromatography, for filtration and insulation, and as an abrasive in soaps.

kieserite $MgSO_4 \cdot H_2O$. A native magnesium sulfate. White, compact masses in the Stassfurt salt beds.

Kikuchi lines The black and white lines which appear when a stream of electrons is scattered by a crystal surface. Cf. *electron microscope*.

killen Irish moss.